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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,259	09/16/2003	Norman S. Martucci	79287.21520	1456

30734 7590 11/01/2006

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EXAMINER	
AFTERGUT, JEFF H	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

C

Office Action Summary	Application No.	Applicant(s)	
	10/663,259	MARTUCCI, NORMAN S.	
	Examiner	Art Unit	
	Jeff H. Aftergut	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *6-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 13-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-5, 13, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Japanese Patent 2001-289366 or Mathews et al (US 2002/0056511) in view of any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 and further in taken with Gareis.

Either one of Japanese Patent 2001-289366 or Mathews et al suggested that it was known at the time the invention was made to form a braided hose assembly by applying a braided reinforcing material about an inner tubular layer, dispersing a polymeric material and a carrier fluid into the braided material to fill the interstices of the braided assembly and sintering the braided assembly after coating with the dispersion. The references both suggested that the braided hose assembly would have been fed through a reservoir which contained the dispersion therein, however there is no evidence that in the reservoir one skilled in the art would have opened up the fibers of the braid in order to facilitate the impregnation of the material. The applicant is specifically referred to the abstract of the disclosure of Japanese Patent '366 and paragraph [0036] of Mathews et al.

The references to any one of Bates et al '743, Bates et al'282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 suggested that in a reservoir bath one skilled in the art desiring to impregnate a fiber bundle wherein the interstices or gaps between the fibers were completely infiltrated with resin would have incorporated a

means to open the fibers up within the coating bath. More specifically, the references to Bates et al '743 at column 4, lines 35-65, column 5, line 1-column 6, line 59, Bates et al '282 at column 4, line 35-65, column 5, line 1-column 6, line 59, Marzocchi et al '830 at column 3, lines 44-60, Marzocchi et al '123 at column 6, lines 48-56 or Marzocchi '452 at column 5, lines 21-29. Clearly, the references to any one of Bates et al '743, Bates et al'282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 suggested that within the reservoir one skilled in the art would have opened up the fibers in the assembly in order to facilitate impregnation of the same and that the opening up of the fibers within the reservoir would have been performed with the use of rollers in the reservoir about which the fibers were bent as they passed through the bath in order to promote impregnation within the spaces of the fibers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques of any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 for impregnation of the fibers with a dispersion in order to ensure complete impregnation of the braided fiber assembly in either one of Japanese Patent 2001-289366 or Mathews et al (US 2002/0056511).

While the references as set forth above suggested that one skilled in the art would have bent the fibers in a resin impregnation bath in order to provide the coating between the fibers in the bath, the references to any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 are not treating a braided material within the bath. However, it was also known to open a braid up in a resin bath with a series of rollers therein in order to facilitate impregnation as suggested

by Gareis. More specifically, the applicant is referred to rolls or bars 42, 44, 46, and 48 over and under which the braided assembly passes as it was fed through an impregnation bath in order to facilitate infiltration of the resin into the braid, see column 4, lines 29-35. Clearly, the technique used to coat the individual fibers of the roving or fiber bundles of any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 would have also been useful for coating a braided material to ensure infiltration of the coating material into the braid. Note that Gareis expressly stated that:

> "The cable 20' is drawn through the tank 40 by an external means (not shown), such as a powered take up reel used in cable manufacturing, over a series of guide rollers 42, 44, 46, and 48 which provide a path of sufficient length through the bath to insure the gel material has adequately penetrated and filled essentially all of the void spaces in the braided layer 28."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques of any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 in the braided hose assemblies of either one of Japanese Patent '366 or Mathews et al as such would have facilitated impregnation of the braid with the dispersion as evidenced by Gareis.

With respect to claim 2, note that the references to any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 suggested the bending step in the reservoir for infiltration of the material between the fibers therein. Regarding claim 3, note that the references to any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 suggested that the fibers would have been fed through a series of bends. Regarding claim 4, note that the

references to any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 suggested that the reservoir would have included the bending means therein and thus the reservoirs of either one of Japanese Patent '366 or Mathews et al would have included the same. Inclusion of such rolls within the bath ensured penetration of the dispersion into the braid and between the fibers therein. Regarding claim 5, note that the references suggested the use of dispersion in a bath. With respect to claim 13, note that the combination suggested that use of the meandering path for the braided assembly in the impregnation bath which would have facilitated the impregnation of the assembly. Regarding claim 16, note that while the reference did not expressly state that the bending of the braided assembly released air bubbles which caused a vacuum that draws the polymer material into the braid, the combination suggested the feeding of the assembly along an identical path under and over a plurality of rollers or bars which facilitated the impregnation operation. It is believed that the release of the air bubbles as well as the formation of the identified vacuum would have intrinsically taken place when practicing the same process and the prior art suggested performing the same steps as recited. Regarding claim 17, see the discussion above regarding claim 5.

3. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with Azari.

The references as set forth above in paragraph 2 suggested the overall operation as recited for impregnation of the braided assembly wherein a braided tube would have been impregnated in a bath which included a plurality of pins or rollers under and over

which the braided assembly passed in order to facilitate opening of the braided fiber assembly and infiltration of the impregnating material within the braid. The references, however, failed to express that one would have been able to vary the position of the rollers or pins in the bath.

Azari taught a process of impregnating a fiber tow or roving with thermoplastic resin wherein the fibers were impregnated within an extruder die. The die included a plurality of pins or rollers 77 of various configurations over and under which the fibers were fed as they passed through the contained thermoplastic material. The reference taught that the function of the pins in the impregnating chamber were "to flatten and spread the fibers 16 in order to expose the various filaments which comprise the fibers 16 to the thermoplastic melt" (column 6, lines 28-32) where the pins "spread the fibers 16 and increase the surfaces of the fibers for wetting" (column 6, lines 36-44). The reference to Azari additionally suggested that the number of spreading pins the fibers pass under and over could be varied as well as the positioning of the pins themselves within the impregnating chamber, see column 6, lines 50-55, column 7, lines 1-4. Clearly the pins of Azari were used in the same manner as the rollers and/or pins of the references to any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 and Gareis. It clearly would have been obvious to one of ordinary skill in the art at the time the invention was made to provide for the adjustability of the location of the bends in order to facilitate good impregnation wherein the rollers or pin location was adjustable within the bath as suggested by Azari in the process of impregnating the braided hose assembly as set forth above in paragraph 2.

Regarding claim 15, note that one skilled in the art would have understood how to vary the positioning and such would have included moving the pins in multiple directions in order to obtain the desired effect of opening up the fibers for the impregnation.

Election/Restrictions

4. Claims 6-12 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4-28-06.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the adjustability of the bending devices in at least one direction (claim 14) or at least two directions (claim 15) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Response to Arguments

6. Applicant's arguments filed 9-27-06 have been fully considered but they are not persuasive.

The applicant argues that the examiner has used a hindsight reconstruction to arrive at the claimed invention. The applicant's arguments are not persuasive in this regard. It should be noted that the references any one of Bates et al '743, Bates et al '282, Marzocchi et al '830, Marzocchi et al '123 or Marzocchi '452 suggested that those skilled in the art would have desired to incorporate bars or rollers within the impregnation bath in order to spread the fibers apart in order to allow for better impregnation. If one were impregnating a braded assembly in a bath, it certainly would have been understood that it would have been desirous to include rollers within the bath which provided a path for the fibers to travel where the fibers went under and over the rollers in order to open up the fibers and allow for impregnation of the fibers with the material in the bath. The statement that one would have desired to open up the fibers to

improve impregnation is not a conclusion. The reference clearly suggested that opening up the fibers would have enhanced the impregnation of the fiber assembly. One is feeding the fibers into the bath for the sole purpose of impregnating the fibers with the polymer material. To include the rollers in the bath to make the impregnation operation better therefore would have been obvious to one of ordinary skill in the art for one desiring to impregnate the fibers in the first place. The portion recited above from the Gareis reference makes it clear that using the meandering path where the fiber assembly was bent and passed under and over the rollers would have insured that "the gel material has adequately penetrated and filled essentially all of the void spaces in the braided layer" as expressed by Gareis. Clearly inclusion of the bending means in a bath which was used to impregnate a braided assembly would have been obvious to those of ordinary skill in the art.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Japanese Patent 2-118158 and Japanese Patent 2-118157 teach the opening up of a braided assembly in order to impregnate the same in a bath via the use of different speed feed rollers which open up the gaps in the fiber assembly.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeff H Aftergut
Primary Examiner
Art Unit 1733

JHA
October 30, 2006